

REMARKS

The present application currently includes 45 claims numbered 1-45. The Examiner rejects claims 1, 3-6, 9-13, 17, 19-27, and 30 under 35 U.S.C. 102(b) as being anticipated by Engl et. al., U.S. Patent, 5, 109, 240. In addition, the Examiner rejects Claims 22 and 27 under 35 U.S.C. 112 second paragraph as being indefinite. Claims 21 and 45 are objected to because of informalities, claim 21 being substantially duplicate of claim 19 and claim 45 depends upon itself. The Examiner objects to Claims 2, 7-8, 14-16, 18, 28-29 as being dependant upon a rejected base claim. However, the Examiner finds these claims would be allowable if re-written an independent form including all of the limitations of the base claim and any intervening claims. Finally, the Examiner has allowed claims 29, 31-45.

By this amendment and response, the Applicant has amended claims 1, 17, 22, 27 and 45 and has cancelled claims 18, 21, and 30.

The Applicant has amended Independent Claim 1 to included (underlined words indicated added text) "a conductive element which is ~~addressable~~ coupled to by a memory circuit via a buffer amplifier and mapped to at least one portion of a digital image, the conductive element being switchable between at least a first and second state, the first state being attracted to ink and the second state not."

As noted above, claims 1, 3-6, 9-13, 17, 19-27, and 30 under 35 U.S.C. 102(b) as being anticipated by Engl Applicant respectfully traverses the rejection of these claims as amended and requests reconsideration for the following reasons:

Engle teaches a plurality of switches 16, each of which is controlled by 3 lines that allow each switch to be switched in either a positive or a negative fashion. The circuit in

Engl however, is not, however, a memory circuit, rather, the switches 16 in Engl will maintain the conductivity and provide the proper output signal via capacitors 15 only so long as all signals are present on the lines. In contrast, the claimed invention includes a memory circuit that is designed to hold a charge in a capacitor even after the input to the memory circuit has been removed. Once the input has been removed from the input of transistor switch 16, the charge on capacitor 15 will begin to decay immediately and the decay time will be dependent upon the output resistance of the switch 16, whether the switch 16 is a bipolar transistor or a MOSFET. Because either of these two switch types provides a very low output resistance, the charge on the capacitor 15 will decay very rapidly with time.

In contrast the claimed invention includes a memory circuit that is configured and arranged to maintain a particular output state even in the absence of any input signal. As discussed in the specification, a typical memory circuit is one in which a pair of inverters are cross connected such that the output of a first inverter is feed into the input of the second inverter and the output of the second inverter is fed into the input of the first inverter. In this way, once the inverters are activated, the cross coupled inverters will maintain the proper output over a very long period of time, which is why the circuit is referred to as a *memory circuit*. Accordingly, there is no teaching in Engl of a memory circuit that is able to maintain a charge on a capacitor after the signals have been released as claimed in the claim invention. Moreover, a single switch as taught in Engl may be susceptible to capacitive loading due to the effects of the toner ink on the capacitor 15. In effect, the toner ink may increase the capacitive loading of the output of the switch 16 such that the output changes state, thus leading to errors in the printed output. A buffer amplifier, as claimed in the amended claim 1, can prevent this capacitive loading and

insure that there are no errors due to this mechanism. Engl fails to teach a buffer amplifier electrically connected in series between each switch 16 and the associated capacitor 15. In the claimed invention, the buffer amplifier inserted between the memory circuit and the conducted elements prevents the conductive element from adversely loading the memory circuit and causing an error due to the switching of the memory circuit to the opposite state from which it is desired to be at.

Thus, the claimed invention as amended is structurally different and patentably distinguishable than the printing system described in Engl. The addition of the buffer amplifier connected in series between the conductive element and the memory circuit is neither taught nor suggested in the Engl reference. Accordingly, the applicant believes that Claim 1 is patentably distinct over the Engl reference. Claims 2-16 depend from Claim 1 and the applicant believes that these claims are patentably distinct over the prior art for at least the same reasons as Claim 1.

The applicant has cancelled claim 18 and included these limitations into claim 17 in order to overcome the objection of the Examiner. Accordingly, the Applicant believes that claim 17 is now patentable over the Engl reference. In addition, claim 21 has been cancelled as it was a substantial duplicate of claim 19. Claims 19, 20, and 22-27 depend from claim 17 and are patentable for at least the same reasons as claim 17.

The Applicant has amended claims 22 and 27 to overcome the rejections of these claims under 112 second paragraph. In particular, the Applicant has amended these claims to remove the narrower statements of the range/limitation.

SUMMARY

Based on the foregoing amendments and arguments, the applicant respectfully submits that Claims 1-17, 19, 20, 22-29, 31-45 now pending in this application are a condition for allowance, and such allowances respectfully requested. Reconsideration and allowance of all claims as amended is respectfully requested. If prosecution of the applicant can be expedited by a telephone conference, the examiner is invited to call the undersigned at the number below. As new claims have been added, additional fees have been incurred by the applicant and a new fee transmittal form and credit card authorization have been included. However, if there are any additional fees due, or the applicant has not provided the correct amount, the Commissioner is hereby authorized to charge the appropriate amount to Deposit Account Number 50-3089. A copy of this page is included for deposit account purposes.

Respectfully submitted,

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